Mandatory Commercial Organics Recycling (AB 1826) Stakeholder Workshop
Item 4

# Generator ID Tool

**The purpose of this tool is for estimating how many employees it takes to generate 8 cubic yards or 4 cubic yards of organics/week for different business types.**

1. **Background information**
    a. **Business Groups** – different business types generate different amounts of organics – compare a restaurant to a car dealership. CalRecycle has developed a list of business groups to use for waste characterization studies, to gather data on waste patterns for each group. Businesses are classified based on the North American Industry Classification System (NAICS) and grouped according to similarities in waste streams. For example, restaurants are in one group – they generate waste differently from most other types of businesses. Finance, insurance, and legal businesses are grouped together because they are office-type businesses and generate waste in similar ways.
    b. **Waste Composition Data** – this provides information on the types and amounts of waste a business generates, such as the amount of food waste or office paper. For example, the waste generated by food stores contains about 57% cardboard and about 28% food. For businesses in the Durable Wholesale Goods category, the waste generated contains about 17% ferrous metal and about 30% lumber. Data is collected by taking samples of waste and recyclables at business sites and sorting them into various material types, and weighing each type. Data from many sites is aggregated to get the profile for the business group.
    c. **Waste Generation Rate Data** – this estimates the overall amount of waste generated by a business type, on a per-employee basis. For example, food stores generate about 319 pounds of total waste per employee per week (including diversion). Data is collected by measuring total amounts of disposal and recycling set out by businesses. Again, data from many sites is aggregated to get the profile for the business group.
    d. **Organic Material Types** – these include food waste, yard waste, lumber, and compostable paper. These material types are defined for the waste characterization study.
    e. **Conversion Factors (Density Data)** – this data converts materials from pounds to cubic yards (data in examples is from CalRecycle staff).

2. **Calculating amounts of organics generated**

The amount of organics generated per employee can be calculated by using data on the percent of organic materials in the waste stream, and the total amount of waste generated (on a per-employee basis). Then, the number of employees needed to get to 8 cubic yards can be calculated.

Example: Waste from food stores contains 28% food, 1.2% yard waste, and 5% lumber. Food stores generate 319 pounds of total waste per employee per week. (CalRecycle 2006 study – see below).

Food waste
319 pounds X 28% food = 89 pounds of food waste per employee per week
Food weighs on average 500 pounds per cubic yard
89 pounds ÷ 500 pounds per cubic yard = 0.18 cubic yards of food waste per employee per week

Yard waste
319 pounds X 1.2% yard waste = 4 pounds of yard waste per employee per week
Yard waste weighs on average 275 pounds per cubic yard
4 pounds ÷ 275 pounds per cubic yard = 0.014 cubic yards of yard waste per employee per week

Lumber
319 pounds X 5% lumber = 16 pounds of lumber per employee per week
Lumber weighs on average 500 pounds per cubic yard also
16 pounds ÷ 500 pounds per cubic yard = 0.03 cubic yards of lumber per employee per week

Total organics generated = 0.18 + 0.014 + 0.03 = 0.22 cubic yards of total organics per employee per week
8 cubic yards per week ÷ 0.22 cubic yards per employee per week = 36 employees needed to generate 8 cubic yards of total organics per week.

Waste generated includes materials both disposed and diverted. All data is from CalRecycle report *Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups*, 2006, unless otherwise noted. **The data will be revised later date using 2014 Waste Characterization Study.**

**3. Obtaining Data on Your Local Businesses – Sources of Information**

a. Local business license or other database that contains employment data for each business in the jurisdiction
b. California Employment Development Department (EDD) Labor Market Information Division (LMID) – use the "Employer By Geographic Area" to get lists of businesses by jurisdiction, according to employment size ranges. http://www.labormarketinfo.edd.ca.gov/aspdotnet/databrowsing/EmpGeog.aspx?menuChoice=emp&searchType=Geography
c. Private Sources of Business Data – ReferenceUSAGov, Dun & Bradstreet, Others
d. Ask for list of businesses by 3 Digit NAICS Code that have the minimum number of employment – see example below. CalRecycle will provide a full list for all 3-digit NAICS codes using data from the 2014 Waste Characterization Study, which will be available in May 2015.

| Business Type | NAICS Code | Minimum employment needed to generate 8 cubic yards |
|---|---|---|
| Food Stores | 445 | 36 |

This table is for reference only and will be revised with 2014 Waste Characterization Study Data later
Do not use the numbers in this table for your planning purpose

## Calculation to Estimate 8 cu yd of Organic Waste Generation by Business Type

| Industry Group | Waste Generation (pounds per employee per year) | Total cu yd Organics per Employee per Week | Number of Employees Needed to Produce 8 cu yd of Organics per Week |
|---|---|---|---|
| Food Stores | 16,578 | 0.222 | 36 |
| Retail, Big Box Stores | 7,798 | 0.051 | 157 |
| Non-Durable Wholesale Distributors | 6,931 | 0.110 | 72 |
| Retail, Other Stores | 3,714 | 0.020 | 396 |
| Durable Wholesale Distributors | 4,719 | 0.056 | 143 |
| Fast-Food Restaurants | 6,528 | 0.097 | 82 |
| Full-Service Restaurants | 6,437 | 0.132 | 61 |
| Building Material & Gardening, Big Box Stores | 9,031 | 0.078 | 102 |
| Building Material & Gardening, Other Stores | 4,599 | 0.074 | 109 |
| Large Hotels (100+ rooms) | 5,049 | 0.093 | 86 |



**NOTES:**

1. Based on data from CalRecycle's 2006 Waste Disposal and Diversion Findings for Selected Industry Groups.
2. Weights were converted to cubic yards using the following conversion factors obtained from CalRecycle staff:
   a. Food - 500 lbs/cu yd
   b. Leaves & Grass and Prunings & Trimmings - 275 lbs/cu yd
   c. Lumber - 500 lbs/cu yd